Data Sciences
cap4770
Class Periods: Monday, Wednesday, Friday 4:05 PM--4:55PM
Location: tbd
Academic Term: Spring 2022

Instructor:
Prof Jorg Peters
jorggato at ufl.edu
352 392-1200
Office Hours: CSE 328 Fr 1:30pm + by appt

Teaching Assistants:
Please contact through the Canvas website
- TBD

Course Description
Introduces the basics of data science including programming for data analytics, classification, clustering, and regression; lays the foundation for big data applications ranging from social networks to medical and business informatics.

Course Pre-Requisites / Co-Requisites
Algorithms (COP3530) or equivalent. Optional but preferred: introductory course to probabilities and statistics.

Course Objectives
Master data preparation, data analytics including pattern mining, classification, clustering, data visualization

Materials and Supply Fees none

Required Textbooks and Software
- available online **D.P. Kroese, Z.I. Botev, T. Taimre, R. Vaisman.** *Data Science and Machine Learning: Mathematical and Statistical Methods***, Chapman and Hall/CRC, Boca Raton, 2019.**

Recommended Materials
- scikit-learn, and many more online resources

Course Schedule
Week 1: Overview; Python setup
Week 2: Importing, Summarizing, and Visualizing Data
Week 3: Statistical Learning I
Week 4:   Statistical Learning II
Week 5:   Monte Carlo Methods I
Week 6: Monte Carlo Methods II
Week 7: Unsupervised Learning
Week 8: Regression
Week 10: Decision Trees
Week 11: Classification
Week 12:   Deep learning I
Week 13: Deep learning II
Week 14:   Deep Learning III

Attendance Policy, Class Expectations, and Make-Up Policy
consistent with university policies in the Graduate Catalog
(http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate

documentation. Additional information can be found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Project (1)	100 each	20%
Tests (2)	100 each	40%
Assignments (4)	100each	40%
		100%

Grading Policy
The following is given as an example only. Grades may be curved.

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 – 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 – 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

Late submissions
5%/day

Students Requiring Accommodations
Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at gatorevals.aa.ufl.edu/public-results/ .

University Honesty Policy
UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that

facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html

Campus Resources:

Health and Wellness

U Matter, We Care:
If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*:* https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints*:* http://www.distance.ufl.edu/student-complaint-process.